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WORK PERFORMED AND FEED UTILIZED BY HORSES AND MULES

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SOURCE OF MATERIAL

Crop correspondents, by means of a mailed questionnaire, supplied information in February 1943 concerning the age distribution of horses and mules on their farms, the average number of days worked and average length of day worked in 1942 for work animals of specified ages, and the average weight of the work animals on their farms. They also furnished information on the kinds and quantities of grains and other concentrates, and hay and other roughages fed to their horses and mules, and on the number of days their horses and mules were pastured in 1942.

Usable reports were received from more than 21,000 crop correspondents who supplied information for about 87,000 head of horses and mules on their farms. In developing the estimates shown in this report concerning age distribution, published data of the Bureau of Agricultural Economics and of the Bureau of the Census, were used along with the data supplied by crop correspondents.

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PRELIMINARY

The farm power situation in 1944 promises to be somewhat less favorable than has been the case in any recent year. However, in normal years our farms have been relatively well supplied with power and with machines. In fact, many farmers have sufficient power to increase materially the scope of their farming operations. The problem now is to utilize the available power with increased efficiency. There is sufficient power to do the production job that lies ahead if it is effectively used, if necessary replacements can be obtained, and if the required labor is available at the right time.

There will be fewer workstock, horses and mules 3 years of age and older, on farms than has been the case for any year in more than half a century and the workstock population contains a relatively high proportion of animals past their prime that are now used largely for light work and often for only a few days each year.

Numbers of tractors at the beginning of 1944 were about the same as a year earlier but the 1944 program is sufficiently large to result in a further increase in tractor numbers. Few new tractors were available in 1943 and therefore the 1944 tractors will average about a year older than did the 1943 tractors. Tractor purchases were high in years before 1943, and many tractors are in good working condition. But some tractors, especially the older ones, as well as some fairly new ones that have been extensively used, have about come to the end of their useful life.

For motor vehicles the situation is less favorable than for draw-bar power. Few replacements for farm motortrucks or automobiles have been available for more than 2 years, and numbers of automobiles and motortrucks have declined from the 1942 peak level. The use of the remaining machines will be lessened somewhat because of the advancing age of the machines.

USE OF ANIMAL POWER FOR FARM WORK CONTINUES TO DECLINE

Farmers now have fewer work animals than has been the case for more than half a century. But for the adoption of tractor and other machine power about 20,000,000 head of workstock would now be needed on farms in order to have as much power in relation to cropland as was the case in 1910. The number of work animals now on farms is only about 55 percent of this figure, having declined by about 9,000,000 head since 1920 (table 1). The place of the displaced animals has been taken chiefly by the increase of about 1,700,000 in the numbers of farm tractors, but the increase of about 2,000,000 in numbers of farm automobiles and of about 900,000 in numbers of farm motortrucks since 1920 has contributed also to the displacement of workstock.

Use of tractor power on farms first assumed importance in World War I, and with the exception of the depression period of the early thirties, has increased steadily. Few tractors were bought in 1943 but in the years immediately preceding 1943, large numbers of tractors were purchased by farmers. Also the 1944 farm machinery program calls for the production of sufficient tractors to provide for a substantial further increase in numbers of tractors. Although about 45 percent of the equivalent work animal units are provided for by tractor power, according to table 1 it is probable that more than 45 percent of the draw-bar work on farms is now done with tractor power. The decline in the proportion of draw-bar work performed with animal power has been greater than the decline in numbers of work animals, as various farm studies show that work animals are now worked fewer hours per year than was the case two decades earlier. In 1920, the number of work animals on farms was less than the number of colts raised in the 10 previous years. In 1944, colt crops for about 17 years were required to equal the numbers of work animals on farms (table 2). Thus, the average age of work animals now is considerably higher than in 1920.

Although tractors now probably supply the power for around 50 percent of the total farm draw-bar work, only about 30 percent of the farmers will own tractors in 1944. The 1939 when there were about 400,000 fewer tractors than are now on farms, 53 percent of the farms of the country relied principally on animal power for draw-bar work, almost 24 percent had neither tractors nor work animals, and the remaining farms had tractor power, with most of them also reporting work animals (table 3). The tractor farms, however, are large farms and in 1939 when they amounted to about 23 percent of the farm numbers, they contributed about half of the value of products sold, traded, and used in the farm home. Farms relying on animal power, or "horse" farms, contributed about 40 percent of the total value of agricultural production, whereas farms having neither work animals nor tractors contributed about 10 percent of the total 1939 value of farm production. Many of the farms without tractors or work animals are cropper farms which depend on the operational unit for their power. Some are subsistence farms which utilize little power, but on some commercial farms power and machine work is hired.

In 1942, area in harvested cropland per farm was on an average more than three times as much on tractor farms as on the reporting farms which relied on animal power for draw-bar work (table 4). Most of the tractor farms also utilize animal power, but the tractors from these farms contribute to the power needs of other farms.

From 1910 to 1920, numbers of workstock increased more than did the area in harvested cropland, notwithstanding the increase in tractors in this decade. Disappearance of work animals became more pronounced as types of tractors adapted for cultivating and for other light work become relatively important. In 1930, work animals displaced by tractors, automobiles and motortrucks amounted to 3.2 head per farm tractor then in use, whereas in 1940 the displacements of work animals amounted to more than 4 head per farm tractor (table 1).

In the country as a whole, wide variations occur in the displacement of work animals by tractor power. On the more than 10,000 tractor farms included in the 1943 survey the average displacement of work animals per tractor was about 4.4 head. Reflecting mainly differences in tractor size and the effectiveness of tractor use, numbers of work animals displaced per tractor ranged from about 2 head to somewhat more than 10 head in the different State groups (table 4).

FURTHER DECLINE IN HORSE AND MULE NUMBERS IN PROSPECT

For about a quarter of a century the decline in the total numbers of horses and mules on farms has been continuous and the end is not yet in sight, since colt production is not sufficient to maintain the present horse and mule numbers. Numbers of horses of all ages reached their peak in 1915 and mule numbers a decade later (table 2). Present numbers of horses are only about 44 percent of the 1915 peak; and of mules about 60 percent of 1925. The 1944 number of farm horses is the smallest reported for any year since 1874 and for mules the 1944 number is less than for any year since 1910.

Along with the increased use of mechanical power came a greatly reduced demand for workstock both on farms and in cities. The size of the colt crop is influenced by the relative returns from the sale of workstock and from competing enterprises, especially cattle and hogs. Thus with the reduced demand and lower prices for workstock, there came rapid and drastic declines in the size of the colt crop. The colt crop which in the years immediately preceding 1919 had averaged more than 2 million head annually had by 1925 declined to about 750,000 head. Further reductions occurred until in 1931 and 1932 production of colts was below 500,000 head annually. Production of colts increased in the mid-thirties but has declined since 1938, and the 1943 crop was only slightly larger than the small colt crops of the early thirties.

The number of horses and mules on farms January 1, 1943 is largely the result of the small colt crops of the past 20 years. About 30 percent of the horses and mules on farms January 1, 1943 were 5 years of age and less; about the same numbers were 16 years old and over, with about 6 percent over 25 years of age (table 5). The number of animals over 25 years of age is relatively large and is accounted for by the big colt crops of 1916 and earlier years. The colt crop in these early years was about three times the average crop of the last 20 years.

If sufficient new farm tractors are available, further mechanization of farms seems likely in the immediate future, largely because of the acute farm labor shortage, high feed prices, and the relatively high prices paid for meat animals. Should the annual colt crop from 1944-49 average 400,000 head, the total number of horses and mules on farms January 1, 1950 will probably approximate 11 million head, with the number of work animals approximating 10 million head. This estimate assumes that the life expectancy of horses and mules will be about the same as at present or that colts raised will live to an average of about 18 years of age.

ANNUAL USE OF WORKSTOCK RELATIVELY LOW ON TRACTOR FARMS

The average time worked per head of workstock for the reporting farms was 835 hours in 1942. In practically all States the average was higher on farms with workstock only than on tractor farms reporting workstock. For the entire country the hours of work per head of workstock averaged about one-third more in 1942 on horse farms than on tractor farms. In Oklahoma and Texas, the Great Plains, and the Pacific States, work performed with work animals on tractor farms was relatively low (table 6).

Differences in the amount of work performed annually per head of workstock were pronounced in different parts of the country. In the Delta States and Southeastern States, the Appalachian and Northeastern States, annual use of workstock was above average. Annual use of workstock was below the United States average in the relatively high mechanized areas west of the Mississippi River, whereas in the Lake States, work performed per head of workstock was fairly close to the country's average.

In many areas where annual use of workstock is above average, production of rather widely diversified cultivated crops is important and the farms, in general, are of small size, with small and irregularly shaped fields prevailing. Use of mechanical power has thus far made relatively little headway in these areas. On many farms in the highly mechanized areas of the West and in the Corn Belt, machine power has been adapted to all operations of crop production. On many farms, work animals are often kept only for performing odd jobs like hauling feed, raking hay, husking corn, hauling bundles to threshers and similar work. In most instances the acreage planted to a specific crop on individual farms is large enough to justify the purchase of the machines adapted for tractor power. In the more Eastern and Southern areas many crop operations have not been mechanized even on tractor farms, chiefly because the acreage of crops grown is too small to justify the purchase of the needed machines. Work performance of tractor machines in the Southern and Eastern areas is relatively low owing to the small acreages grown, the irregular shape and the hilly fields on which the crops are grown. The time worked per day by workstock is above average in the Southern areas where work animals are used to a greater extent for field work than in other parts of the country. In much of the South, there are fewer animals to feed and care for than in other parts of the country, and this leaves more time for field work than is the case in other areas in which farm chores are often an important part of the day's work.

In addition to the regional variations in the work done by work animals, there are in many States important area differences. Thus, especially in the Central Plains States, work performed annually per head of workstock is above average in the more humid areas (fig. 1). Even before the adoption of mechanical power, annual use of work animals was above average in the humid areas, mainly because the greater diversity of crops made for more working days each year.

HOURS OF WORK VARIES WITH AGE OF ANIMAL

The amount of work performed with work animals varies appreciably with the age of animal. Hours of work is highest for animals of from 6 to 10 years of age, but animals from 11 to 15 years of age, as well as 5-year old animals, were worked more hours than the average of all work animals (table 7).

Work animals more than 25 years old worked only half as much on the average as did all work animals. Also, it seems likely that in many instances the older animals were kept chiefly for light work and often were used only a few days each year. Some of the older animals were designated as "pensioners" and were kept for sentimental reasons. Young work animals, 3- and 4-year olds, were used relatively little, especially the 3-year olds. This was due probably to a tendency on the part of farmers to use the well-broken animals for regular work and to use the younger animals principally in rush seasons when all of the available power was needed.

Also, wide variations in the hours of work of work animals for farms with similar power are found within the same region. For all regions and farm types there were animals 3 years old and over that did no work in 1942. Whereas, other workstock worked more than 1,500 hours. In the Southeastern and Delta States, more than 60 percent of the workstock on reporting farms were used 1,000 or more hours; in the Pacific Coast and Mountain States less than 25 percent of the animals worked 1,000 hours or more (table 8). Most of the idle animals were either young or past their prime, but a higher proportion of idle animals were on tractor farms than on horse farms. Also in the highly mechanized areas such as the Pacific Coast, Mountain, and Great Plains States there were relatively more idle animals than in the Southern States where the annual work output of work animals is above average. The relatively high proportion of idle animals, together with the below-average annual use of workstock seems to indicate that workstock are relatively plentiful in relation to the need of workstock on tractor farms in the highly mechanized areas.

WORK ANIMALS LARGER THAN IN EARLIER PERIOD

During the last quarter of a century there has been an increase in the average weight of workstock. The increase in weight was slightly greater for horses than for mules. Increases were reported for all parts of the country (table 9).

Wide regional differences in weight of work animals are shown by the 1943 survey and by a similar survey made in 1917. In the Lake States, the Corn Belt and other Northern areas, work animals are relatively large, but in the Delta States and the Southeastern States they are considerably below the average of all work horses and mules for the country as a whole.

In 1943 less than 5 percent of the work horses weighed more than 1,650 pounds; about 10 percent weighed 1,050 pounds and less. About 60 percent of the work horses weigh from 1,251 to 1,650 pounds. In the Delta States about two-thirds of the work horses weighed 1,050 pounds or less, whereas in most Western and Northern States less than 5 percent of the work horses were in these weight groups (table 10).

Differences in mule weights in different parts of the country were less than those for horses. In many areas the average weight of mules tended to be about 200 pounds less than weights of horses. However, in the Delta States, the average weight of work mules and work horses was about the same. Also in the Great Plains and Mountain States there was relatively little difference in the weight of horses and mules.

GRAIN CONSUMPTION CLOSELY RELATED TO TIME WORKED

The use of grain as a feed for horses and mules—including both mature and young animals, varies tremendously in different parts of the country. In the Southeast and the Delta States more grain is fed to horses and mules than in other parts of the country. Feeding of grain is also high in the Northeastern States (table 11). Grain feeding is light in the Pacific and Mountain States and about average in the important grain-producing Corn Belt and Lake States.

Great variation is found in the total concentrates fed to horses and mules on different farms in any State or region (fig. 2). In nearly all regions a small percentage shows no concentrates fed. In the West, however, the percentage of farms feeding no grain was rather large. The percentage of farms feeding over 3,500 pounds of grain annually was small in most regions except the South (table 12).

In general the annual use of work animals is high in areas of heavy grain-feeding and low in areas of light feeding. In the Southern areas where grain-feeding is heavy, good roughage and good pastures are scarce and relatively expensive compared with other parts of the country.

CORN AND OATS PRINCIPAL GRAINS FED

Corn and oats together accounted for more than 90 percent of the total concentrates fed to horses and mules in 1942. Corn alone amounted to about 55 percent of the total with oats representing 37 percent. In the Southeast, the Appalachian and Delta States, eastern Texas and Oklahoma, and along the Ohio, Cumberland, and Potomac Rivers, corn usually accounted for 75 percent or more of the grain fed to horses and mules (fig. 3). Little corn was fed in the Pacific States, most of the Mountain States, the New England States, and the northern Great Plains. In these areas corn production is not important.

Oats were fed to horses and mules throughout the country but oat-feeding was heaviest in the Northern areas where 50 percent or more of the total concentrates were oats. In the southern and central Appalachian areas, oats were not important as a feed for workstock (fig. 4).

Feeding of grain sorghums, barley, wheat, rye, buckwheat, and commercial mixed feeds was relatively unimportant in the country as a whole, although a few areas where the bulk of the concentrate feeds came from these sources (fig. 5).

In parts of the Southern and Central Plains and in the Southwest, feeding of grain sorghum, often as bundle feed, was important. In some areas of the New England States the feeding of commercial mixtures was important, whereas barley was most important as a horse feed in the irrigated areas of the Mountain and Pacific Coast States (table 13). The pattern of grain feeding was generally in line with local production of grain crops. Farmers tend to feed either their own grain or locally

produced grains. Where both corn and oats were produced in large volumes, there was a tendency for relatively heavy feeding of oats to the horses and mules.

HAY CONSUMPTION HIGH IN NORTHERN AREAS

In the country as a whole the average quantity of hay fed to horses and mules in 1942 was 1.8 tons per head but consumption of hay varied widely in the different areas (table 14). Little hay was fed in Oklahoma and Texas, along the lower Mississippi River, and in some Southeastern States, and some Mountain States. The feeding of hay was above average all along the Northern border of the country (fig. 6). On some farms, especially in the irrigated areas of the northern Mountain States and the Pacific Coast States, hay was the only feed except pasture that was fed to workstock.

Heavy feeding of alfalfa was reported on many Western farms, but in the country as a whole, a wide variety of hay was fed to horses and mules.

In the areas of heavy hay feeding, hay production is large and prices relatively low. In most of the South where consumption of hay is light, hay production is low and prices relatively high, and heavy feeding of grain and light feeding of hay is generally practiced.

In those Mountain States where feeding of hay is light, many of the animals are kept for range work rather than field work. In many instances range animals depend almost exclusively on pasturage for feed.

In addition to hay, horses and mules utilize fairly important quantities of straw, cornstalks and sorghum roughage. Utilization of straw was of some importance in most areas. This includes the straw fed when small grain like oats and wheat were fed unthreshed, as well as the actual straw and chaff fed after threshing. The feeding of straw was heaviest in the Northern Great Plains and Lake States, but was above average in the Corn Belt and the small-grain areas along the Columbia and Snake Rivers of the Pacific Northwest. Relatively little straw was utilized by horses and mules in the more Southern areas of the country where not much small grain is produced.

PASTURE AN IMPORTANT HORSE FEED

During the last quarter of a century pasturage per head has been of increasing importance as a horse feed. With the increased use of tractor and power machines, numbers of workstock have decreased and work hours have been fewer and work lighter for the remaining animals. More idle days and lighter work have contributed to an increase in pasture use. Use of pasturage is most important in the Range States where year around grazing often prevails (table 14). Pasture was relatively unimportant in the States along the Atlantic Seaboard. These areas have either relatively few pastures, or, as is the case in the more Northern States, a short growing season. In the humid areas little pasturage is available except during the growing season.

Table 1.- Cropland harvested, horses and mules 3 years old and over, and farm tractors, United States, specified years

Year	Cropland harvested	Horses and mules 3 years old and over on farms, Jan. 1	Work animals needed if there were no tractors or motor vehicles 1/	Tractors on farms Jan. 1	Work animals displaced per farm tractor 2/	Cropland harvested: Per tractor	Cropland harvested: Per head of workstock	Cropland harvested: Per equivalent work animal unit 3/
	Million acres	Thousands	Thousands	Thousands	Number	Acres	Acres	Acres
1910	329	18,010	18,010	1		---	18.3	18.3
1920	360	20,300	19,703	246		1,463.4	17.7	16.9
1930	370	17,330	20,261	920	3.2	402.2	21.4	17.4
1940	344	12,215	18,838	1,545	4.3	222.7	28.2	18.3
1941	348	11,940	19,055	1,665	4.3	209.0	29.2	18.3
1942	351	11,640	19,217	1,836	4.1	191.2	30.2	18.1
1943	355	11,530	19,433	1,906	4.1	186.3	30.8	18.1
1944 4/	365	11,290	19,973	1,937	4.5	188.4	32.3	18.7

1/ In 1910 there were 18.3 acres of harvested cropland per head of workstock. This ratio of cropland to workstock was applied in the other years.

2/ Calculated by deducting the actual numbers of workstock from the number of work animals needed if there were no tractors or motor vehicles and dividing the difference by the number of tractors. The automobile and the motortruck contributed to the displacement of work animals but it is believed that the tractor was responsible largely for the decline in numbers of work animals.

3/ A work animal unit is a horse or a mule 3 years old or over. Tractors on farms were considered equivalent to 4.25 work-animal units each.

4/ Preliminary estimates.

Table 2.- Horses and mules on farms, United States, 1910-44

Year	Horses and mules, including colts, on farms January 1			Colts under 1 year of age January 1	Workstock 3 years old and over January 1 1/
	Horses	Mules	Total		
	1,000 head	1,000 head	1,000 head	1,000 head	1,000 head
1910	19,972	4,239	24,211	---	18,010
1911	20,418	4,429	24,847	2,160	18,460
1912	20,726	4,551	25,277	2,240	18,760
1913	21,008	4,683	25,691	2,306	19,100
1914	21,308	4,870	26,178	2,348	19,390
1915	21,431	5,062	26,493	2,346	19,600
1916	21,334	5,200	26,534	2,369	19,590
1917	21,306	5,353	26,659	2,218	19,840
1918	21,238	5,485	26,723	2,073	20,180
1919	20,922	5,568	26,490	1,864	20,440
1920	20,091	5,651	25,742	1,606	20,300
1921	19,369	5,768	25,137	1,319	20,440
1922	18,764	5,824	24,588	1,109	20,630
1923	18,125	5,893	24,018	955	20,700
1924	17,378	5,907	23,285	843	20,430
1925	16,651	5,918	22,569	759	20,060
1926	16,083	5,903	21,986	750	19,670
1927	15,388	5,804	21,192	706	19,015
1928	14,792	5,656	20,448	652	18,380
1929	14,234	5,510	19,744	603	17,820
1930	13,742	5,382	19,124	574	17,330
1931	13,195	5,273	18,468	522	16,800
1932	12,664	5,148	17,812	464	16,280
1933	12,291	5,046	17,337	465	15,910
1934	12,052	4,945	16,997	546	15,545
1935	11,861	4,822	16,683	668	15,030
1936	11,598	4,628	16,226	728	14,310
1937	11,342	4,460	15,802	768	13,670
1938	10,995	4,250	15,245	806	12,980
1939	10,629	4,163	14,792	748	12,510
1940	10,442	4,039	14,481	752	12,215
1941	10,214	3,922	14,136	730	11,940
1942	9,907	3,813	13,720	635	11,640
1943	9,675	3,704	13,379	517	11,530
1944	9,330	3,559	12,889	478	11,290

1/ The number of work animals was estimated by deducting from the total number of horses and mules January 1, of each year; the number of colts less than 1 year of age, 98 percent of the colt crop a year earlier, and 97 percent of the colt crop 2 years earlier.

Table 3. - Farms reporting specified classes of power, State groups, and the United States, 1939 1/

State group 2/	All farms	Farms with animal power only	Tractor farms		Farms without animal or tractor power
			With work animals	Without work animals	
	Number	Percent	Percent	Percent	Percent
New England	135,190	34.9	11.7	7.6	45.8
Middle Atlantic	348,100	41.6	24.9	8.1	25.4
East North Central	1,006,095	40.3	34.1	5.8	19.8
West North Central	1,090,574	40.4	38.9	5.8	14.9
South Atlantic	1,019,451	66.9	4.7	0.9	27.5
East South Central	1,023,349	65.8	3.3	0.3	30.6
West South Central	964,370	65.3	9.5	5.4	19.8
Mountain	233,497	53.6	21.9	6.4	18.1
Pacific	276,173	29.5	14.0	13.6	42.9
United States	6,096,799	53.0	18.6	4.5	23.9

1/ U. S. Census 1940, Technical Monograph, "Farm Characteristics by Value of Products."

2/ New England includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut. Middle Atlantic includes New York, New Jersey, and Pennsylvania. East North Central includes Ohio, Indiana, Illinois, Michigan, and Wisconsin. West North Central includes Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. South Atlantic includes Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida. East South Central includes Kentucky, Tennessee, Alabama, and Mississippi. West South Central includes Arkansas, Louisiana, Oklahoma, and Texas. Mountain includes Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, and Nevada. Pacific includes Washington, Oregon, and California.

Table 4. - Size of farms, cropland harvested in 1942, farm tractors and horses and mules 3 years old and over, for farms with specified power 1/

State group 2/	Tractor farms reporting workstock					Horse and/or mule farms			
	Size of farm in 1942	Cropland harvested per farm in 1942	Tractors per farm Jan. 1, 1943	Work animals per farm Jan. 1, 1943	Work animals displaced per farm tractor 3/	Size of farm in 1942	Cropland harvested per farm in 1942	Work animals per farm Jan. 1, 1943	Cropland harvested per head of workstock
	Acres	Acres	Number	Number	Number	Acres	Acres	Number	Acres
Northeast	197	98	1.20	2.7	1.8	127	50	2.5	20.0
Corn Belt	237	152	1.25	3.1	3.4	152	68	3.3	20.6
Lake States	219	132	1.19	3.1	2.3	139	68	3.0	22.7
Great Plains	755	340	1.33	4.4	5.3	481	149	5.0	29.8
Appalachian	292	113	1.09	3.8	2.2	158	51	2.8	18.2
Southeast	381	143	1.18	4.1	2.1	145	53	2.4	21.7
Delta States	600	309	1.80	10.5	5.8	130	49	3.1	15.8
Oklahoma-Texas	894	294	1.31	3.8	8.6	187	72	3.7	19.5
Mountain	1,709	265	1.28	5.5	7.3	753	96	5.4	17.8
Pacific	920	297	1.43	3.8	10.6	270	55	3.5	15.7
United States	522	202	1.27	3.8	4.4	139	63	3.2	19.7

1/ Based on 10,022 reports for tractor farms, and 7,706 horse farms, distributed as follows: Northeast, 1,120 tractor farms and 748 horse farms; Corn Belt, 2,676 tractor farms and 1,071 horse farms; Lake States, 1,441 tractor farms, 657 horse farms; Great Plains, 1,752 tractor farms and 357 horse farms; Appalachian, 379 tractor farms and 1,206 horse farms; Southeast, 528 tractor farms and 1,454 horse farms; Delta, 214 tractor farms and 903 horse farms; Oklahoma-Texas, 542 tractor farms and 486 horse farms; Mountain States, 698 tractor farms and 412 horse farms; and Pacific, 672 tractor farms and 412 horse farms. A work animal is a horse or mule 3 years old or over.

2/ Northeast includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, and Maryland. Corn Belt includes Ohio, Indiana, Illinois, Iowa, and Missouri. Lake States include Michigan, Wisconsin, and Minnesota. Great Plains include North Dakota, South Dakota, Nebraska, and Kansas. Appalachian includes West Virginia, Kentucky, and Tennessee. Southeast includes Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama. Delta includes Mississippi, Arkansas, and Louisiana. Mountain includes Montana, Idaho, Wyoming, Colorado, Utah, Nevada, New Mexico, and Arizona. Pacific includes Washington, Oregon, and California.

3/ It was assumed that if there were no tractors the number of workstock needed in each State group would be the same per 100 acres of cropland as for horse farms. From the calculated number of needed work animals on tractor farms, the actual number of workstock on tractor farms was deducted and this figure divided by the average number of tractors gives the work animals displaced per tractor.

Table 5.- Estimated age distribution of horses and mules, including colts, on farms and number of animals remaining per 100 colts raised, specified periods, United States, January 1, 1943

Age January 1, 1943 (years)	Horses and mules on farms January 1, 1943		Total number of colts from which animals of specified age on January 1, 1943 were derived 1/	Horses and mules on farms all ages January 1, 1943 per 100 colts raised
	Thousands	Percent	Thousands	Number
Less than 3	1,846	13.8	1,882	98.0
3-5	2,181	16.3	2,306	94.5
6-10	2,890	21.6	3,175	91.0
11-15	2,382	17.8	2,815	84.6
16-20	1,886	14.1	4,013	47.0
21-25	1,378	10.3	7,971	17.3
Over 25	816	6.1	15,987	5.1
Total	13,379	100.0	38,149	35.1

1/ Animals less than 3 years of age include the colt crops of 1940-42 inclusive; the 3-5 year group includes the 1937-39 colt crops; the 6-10 year group the 1932-36 colt crops; the 11-15 year group the 1927-31 colt crops; the 16-20 year group the 1922-26 colt crops; the 21-25 year group the 1917-21 colt crops; and the group over 25 years of age includes the 1910-16 colt crops. It is believed that few animals are now alive that were foaled before 1910.

Table 6.- Average annual use of horses and mules 3 years old and over on tractor and horse farms 1/, designated States and State groups, 1942

State or State group	Tractor farms with workstock			Horse farms			All farms		
	Days worked per animal	Time worked per day	Time worked per animal in 1942	Days worked per animal	Time worked per day	Time worked per animal in 1942	Days worked per animal	Time worked per day	Time worked per animal in 1942
	Number	Hours	Hours	Number	Hours	Hours	Number	Hours	Hours
New England	136	6.8	925	141	6.8	960	140	6.8	950
New York	146	6.5	950	152	7.0	1,060	149	6.7	1,000
New Jersey	123	7.4	910	132	7.2	950	122	7.5	915
Pennsylvania	105	7.9	830	138	7.8	1,075	117	7.9	925
Delaware	81	8.4	680	106	8.4	890	89	8.4	750
Maryland	97	8.8	850	127	9.4	1,190	110	9.0	990
Northeast	120	7.5	900	137	7.7	1,060	127	7.5	950
Ohio	81	8.1	660	106	8.2	870	91	8.1	740
Indiana	75	8.7	650	108	8.7	940	81	8.7	705
Illinois	78	8.6	670	87	8.8	765	80	8.6	685
Iowa	88	8.2	720	127	8.3	1,060	94	8.2	770
Missouri	105	8.7	910	101	8.9	900	102	8.8	900
Corn Belt	85	8.4	715	105	8.7	910	90	8.5	765
Michigan	84	8.2	690	132	7.9	1,040	102	8.1	825
Wisconsin	128	7.1	900	138	7.2	1,000	131	7.1	935
Minnesota	91	7.9	720	125	8.2	1,025	95	8.0	760
Lake States	106	7.5	800	134	7.6	1,025	112	7.7	860
North Dakota	77	8.1	625	107	8.2	875	81	8.2	660
South Dakota	82	8.0	660	113	8.4	950	83	8.3	685
Nebraska	81	8.1	660	116	8.6	1,000	87	8.2	710
Kansas	79	7.6	600	103	8.0	820	84	8.1	680
Great Plains	80	7.9	630	109	8.3	905	84	8.2	685
West Virginia	108	8.3	900	102	8.5	870	102	8.6	875
Kentucky	92	9.9	910	98	9.2	900	98	9.2	905
Tennessee	92	9.6	880	99	9.8	970	97	9.7	940
Appalachian	96	9.5	910	100	9.1	910	99	9.2	910
Virginia	103	8.8	905	114	8.9	1,015	110	8.9	975
North Carolina	110	9.2	1,010	121	9.2	1,113	117	9.2	1,075
South Carolina	117	9.7	1,140	130	9.8	1,270	123	9.7	1,190
Georgia	102	9.8	1,000	125	9.8	1,225	119	9.7	1,160
Florida	87	8.6	750	119	8.6	1,020	114	8.6	980
Alabama	97	10.0	970	125	9.6	1,200	120	9.8	1,180
Southeast	105	9.3	975	123	9.3	1,150	117	9.4	1,100

- Continued

Table 6.- Average annual use of horses and mules 3 years old and over on tractor and horse farms 1/, designated States and State groups, 1942 Continued

State or State group	Tractor farms with workstock			Horse farms			All farms		
	Days worked per animal	Time worked per day	Time worked per animal in 1942	Days worked per animal	Time worked per day	Time worked per animal in 1942	Days worked per animal	Time worked per day	Time worked per animal in 1942
	Number	Hours	Hours	Number	Hours	Hours	Number	Hours	Hours
Mississippi	106	10.1	1,070	114	9.9	1,125	110	9.8	1,080
Arkansas	83	9.7	805	120	9.7	1,160	114	9.6	1,090
Louisiana	97	9.7	940	105	9.5	1,000	105	9.5	990
Delta States	96	9.8	940	114	9.6	1,100	110	9.6	1,050
Oklahoma	70	8.5	600	104	8.7	910	85	8.5	720
Texas	73	8.8	640	111	9.0	1,000	94	8.8	825
Oklahoma-Texas	71	8.6	620	107	8.9	950	89	8.6	765
Montana	68	8.1	550	94	8.1	760	73	8.1	590
Idaho	82	7.9	650	102	7.9	800	88	7.9	695
Wyoming	74	7.4	550	71	8.1	575	74	7.6	565
Colorado	88	8.1	710	104	7.9	820	91	8.1	735
Utah	109	7.7	840	137	7.3	1,000	116	7.9	915
Nevada	75	6.5	500	90	8.0	720	79	6.9	545
New Mexico	69	8.4	580	113	8.2	930	96	8.3	800
Arizona	67	7.7	515	118	8.5	1,000	82	7.4	605
Mountain	79	7.8	620	101	7.9	800	86	8.0	685
Washington	56	8.2	460	86	7.8	670	70	8.0	560
Oregon	55	7.9	435	83	7.7	635	67	7.7	515
California	73	7.9	580	95	8.0	760	81	8.0	645
Pacific	61	8.0	490	86	7.8	670	71	8.0	565
United States	90	8.2	740	112	8.7	980	99	8.4	835

1/ No information was obtained in this survey relative to the work performed by animals less than 3 years of age. However, it is believed that most of the 2-year olds were unbroken.

Table 7. - Influence of age on the annual use of work animals, State groups, 1942

State group 1/	Average time worked in 1942 by animals of specified ages								
	All ages	3 years old	4 years old	5 years old	6-10 years old	11-15 years old	16-20 years old	21-25 years old	25 years and over
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Northeast	950	460	930	1,025	1,090	980	920	710	495
Corn Belt	765	390	660	820	900	860	735	580	415
Lake States	860	360	700	990	1,015	930	750	645	465
Great Plains	685	290	560	740	830	760	700	480	245
Appalachian	910	375	855	1,030	990	960	865	755	345
Southeast	1,100	835	1,145	1,135	1,190	1,145	1,025	890	670
Delta States	1,050	745	1,050	1,135	1,135	1,080	1,000	925	630
Oklahoma-Texas	765	550	810	820	850	790	710	580	530
Mountain	685	460	685	780	810	685	610	555	210
Pacific	565	210	475	530	745	615	540	465	215
United States	835	475	750	900	970	910	785	640	420

1/ See footnote 2, table 4.

Table 8.- Work animals on farms, distributed by hours used, State groups, 1942

Class of farm and State group 1/	Average hours worked per head in 1942	Percentage of animals in 1942 that were-				
		Not worked	Worked 499 hours and less	Worked 500 to 999 hours	Worked 1,000 to 1,499 hours	Worked 1,500 hours and over
	Number	Percent	Percent	Percent	Percent	Percent
Tractor farms						
Northeast	900	2.6	27.4	28.9	24.1	17.0
Corn Belt	715	4.6	38.0	29.4	17.5	10.5
Lake States	800	2.9	36.8	27.7	19.6	13.0
Great Plains	630	8.2	42.7	27.2	14.0	7.9
Appalachian	910	2.7	23.5	28.2	24.3	21.3
Southeast	975	1.9	17.0	27.4	32.3	21.4
Delta States	940	3.0	18.8	27.1	28.6	22.5
Oklahoma-Texas	620	8.1	41.7	27.8	15.3	7.1
Mountain	620	2.9	49.4	27.7	12.0	8.0
Pacific	490	6.5	55.0	26.4	8.9	3.2
United States	740	4.7	37.9	28.1	17.9	11.4
Horse farms						
Northeast	1,060	1.4	17.3	30.7	27.4	23.2
Corn Belt	910	3.0	23.3	28.4	27.4	17.9
Lake States	1,025	.7	21.7	29.1	26.3	22.2
Great Plains	905	5.6	21.9	29.7	23.3	19.5
Appalachian	910	1.2	21.1	31.6	25.9	20.2
Southeast	1,150	1.2	9.4	22.7	32.0	34.7
Delta States	1,100	2.9	10.1	21.6	33.9	31.5
Oklahoma-Texas	950	2.6	19.0	27.6	26.5	24.3
Mountain	800	2.4	34.7	31.7	17.5	13.7
Pacific	670	5.2	37.4	34.6	14.8	8.0
United States	980	2.4	20.1	28.2	26.6	22.7
All farms						
Northeast	950	2.1	23.0	29.6	26.0	19.3
Corn Belt	765	3.9	34.8	29.0	19.9	12.4
Lake States	860	2.3	32.8	28.5	21.1	15.3
Great Plains	685	7.6	38.8	28.0	16.1	9.5
Appalachian	910	1.7	21.5	30.4	26.4	20.0
Southeast	1,100	1.4	12.1	24.1	30.8	31.6
Delta States	1,050	2.7	13.0	23.5	31.6	29.2
Oklahoma-Texas	765	5.7	30.6	27.1	21.2	15.4
Mountain	685	2.7	44.1	29.8	13.4	10.0
Pacific	565	5.8	47.8	29.8	11.4	5.2
United States	835	3.7	30.9	28.2	21.3	15.9

1/ See footnote 2, table 4.

Table 9.- Average weight of work animals on farms, 1917 and 1943 1/

State and State group	1917 2/		1943	
	Horses	Mules	Horses	Mules
	Pounds	Pounds	Pounds	Pounds
Maine	1,325	1,050	1,430	-
New Hampshire	1,270	1,050	1,365	-
Vermont	1,200	1,000	1,325	-
Massachusetts	1,255	1,040	1,375	-
Rhode Island	1,290	1,020	1,370	-
Connecticut	1,220	1,040	1,410	-
New York	1,180	995	1,380	1,270
New Jersey	1,220	1,010	1,335	1,170
Pennsylvania	1,210	1,000	1,395	1,170
Delaware	1,080	920	1,205	1,110
Maryland	1,150	995	1,340	1,165
Northeast	1,205	1,000	1,375	1,165
Ohio	1,310	1,040	1,465	1,140
Indiana	1,255	1,040	1,460	1,130
Illinois	1,270	1,050	1,420	1,220
Iowa	1,320	1,050	1,460	1,180
Missouri	1,130	1,015	1,295	1,170
Corn Belt	1,265	1,035	1,430	1,165
Michigan	1,295	1,040	1,470	1,350
Wisconsin	1,300	1,025	1,440	1,260
Minnesota	1,305	1,035	1,405	1,250
Lake States	1,300	1,035	1,440	1,290
North Dakota	1,290	1,040	1,345	-
South Dakota	1,245	1,010	1,355	1,050
Nebraska	1,255	1,040	1,350	1,245
Kansas	1,220	1,040	1,350	1,230
Great Plains	1,250	1,040	1,350	1,225
West Virginia	1,165	950	1,315	965
Kentucky	1,010	950	1,205	1,040
Tennessee	990	890	1,125	1,050
Appalachian	1,035	920	1,250	1,040
Virginia	1,100	950	1,300	1,075
North Carolina	980	880	1,180	1,085
South Carolina	950	925	1,115	1,030
Georgia	940	970	1,085	1,025
Florida	850	970	970	980
Alabama	895	895	1,000	975
Southeast	1,000	930	1,205	1,025

- Continued

Table 9.- Average weight of work animals on farms, 1917 and 1943 1/ -Contd.

State and State group	1917 2/		1943	
	Horses	Mules	Horses	Mules
	Pounds	Pounds	Pounds	Pounds
Mississippi	870	865	950	970
Arkansas	960	890	1,070	1,020
Louisiana	900	940	925	995
Delta States	915	890	1,000	990
Oklahoma	1,080	960	1,230	1,070
Texas	1,000	930	1,125	1,010
Oklahoma-Texas	1,030	940	1,200	1,030
Montana	1,290	1,010	1,355	-
Idaho	1,270	1,050	1,400	1,385
Wyoming	1,290	1,030	1,320	
Colorado	1,230	1,050	1,340	1,250
New Mexico	1,030	920	1,140	1,225
Arizona	1,150	970	1,170	1,050
Utah	1,270	1,020	1,375	
Nevada	1,200	980	1,300	
Mountain	1,235	1,000	1,350	1,215
Washington	1,350	1,110	1,430	1,060
Oregon	1,310	1,100	1,405	1,365
California	1,285	1,065	1,360	1,180
Pacific	1,310	1,080	1,410	1,175
United States	1,203	956	1,340	1,040

1/ These data probably do not include many saddle horses and pack animals which usually are not considered workstock by farmers.
2/ U.S.D.A. Yearbook, 1918, table 306, page 704.

Table 10. - Farm work animals distributed according to weight, State groups, 1943 1/

State group 2/	Average weight	850 pounds and less	851-1,050 pounds	1,051-1,250 pounds	1,251-1,450 pounds	1,451-1,650 pounds	Over 1,650 pounds
	Pounds	Percent	Percent	Percent	Percent	Percent	Percent
			WORK HORSES				
Northeast	1,375	0.5	3.4	23.6	40.9	26.7	4.9
Corn Belt	1,430	.2	2.2	17.4	32.6	38.1	9.5
Lake States	1,440	—	1.0	13.0	36.8	43.1	6.1
Great Plains	1,350	.2	2.5	26.6	48.1	20.2	2.4
Appalachian	1,250	1.9	14.2	37.4	33.1	12.8	.6
Southeast	1,205	5.0	24.1	31.9	26.8	9.9	2.3
Delta States	1,000	21.4	45.8	28.0	3.9	.9	—
Oklahoma-Texas	1,200	4.1	20.8	43.2	21.4	9.8	.7
Mountain	1,350	.5	5.5	27.0	40.5	23.0	3.5
Pacific	1,410	.4	3.3	16.2	39.5	33.1	7.5
United States	1,340	1.9	8.1	24.5	34.7	26.1	4.7
			WORK MULES				
Northeast	1,165	2.1	25.3	49.5	17.9	5.2	—
Corn Belt	1,165	2.6	22.2	51.0	21.6	2.6	—
Lake States	1,290	—	—	36.4	54.5	9.1	—
Great Plains	1,225	—	8.8	53.0	35.3	2.9	—
Appalachian	1,040	9.9	46.3	36.9	6.2	.7	—
Southeast	1,025	8.2	56.9	31.0	3.7	.2	—
Delta State	990	17.6	56.5	22.2	2.8	.9	—
Oklahoma-Texas	1,030	14.6	46.2	32.7	5.3	1.2	—
Mountain	1,215	7.2	21.4	21.4	35.7	14.3	—
Pacific	1,175	5.9	17.6	47.1	23.5	5.9	—
United States	1,040	10.6	48.4	32.7	7.2	1.1	—

1/ See footnote 1, table 9.
2/ See footnote 2, table 4.

Table 11. - Concentrates fed to horses and mules, days concentrates were fed and time worked, 1942

State and State group	Concentrates fed to horses and mules, including colts: On tractor farms per head	On farms with work-stock only per head	On all farms per head	Corn	Oats	All other concentrates	Days grain was fed to work animals	Time work animals were worked per head
	Pounds	Pounds	Pounds	Percent	Percent	Percent	Number	Hours
New England	1,860	2,460	2,430	13	46	41	275	950
New York	2,100	1,940	2,060	17	68	15	284	1,000
New Jersey	2,740	2,540	2,660	76	15	9	310	915
Pennsylvania	2,668	2,731	2,689	51	43	6	254	925
Delaware	1,840	1,910	1,870	97	2	1	302	750
Maryland	2,020	2,680	2,280	87	9	4	265	990
Northeast	2,330	2,400	2,375	40	46	14	272	950
Ohio	1,590	1,860	1,690	67	31	2	229	740
Indiana	1,790	2,055	1,870	77	22	1	219	705
Illinois	2,065	2,010	2,040	61	38	1	222	685
Iowa	2,090	2,190	2,125	55	45	0	226	770
Missouri	1,885	1,620	1,750	61	38	1	233	900
Corn Belt	1,920	1,935	1,925	62	37	1	227	765
Michigan	1,550	1,825	1,640	29	67	4	235	825
Wisconsin	1,800	1,830	1,810	24	73	3	211	935
Minnesota	2,090	2,090	2,090	25	74	1	221	760
Lake States	1,865	1,940	1,890	26	72	2	221	860
North Dakota	1,690	1,650	1,670	6	87	7	202	660
South Dakota	1,320	1,360	1,340	16	77	7	186	685
Nebraska	1,420	1,760	1,500	32	60	8	220	710
Kansas	1,500	1,825	1,600	29	59	12	214	680
Great Plains	1,480	1,660	1,520	22	69	9	207	685
West Virginia	1,585	1,740	1,700	83	15	2	239	875
Kentucky	1,960	1,700	1,825	94	4	2	260	905
Tennessee	2,615	2,145	2,280	94	5	1	271	940
Appalachian	2,215	1,910	2,020	93	6	1	263	910

- Continued -

Table 11.- Concentrates fed to horses and mules, days concentrates were fed and time worked, 1942 - Continued

State and State group	Concentrates fed to horses and mules, including colts							Time work animals were worked per head
	On tractor farms per head	On farms with work-stock only per head	On all farms per head	Corn	Oats	All other concentrates	Days grain was fed to work animals	
	Pounds	Pounds	Pounds	Percent	Percent	Percent	Number	Hours
Virginia	2,025	2,055	2,040	85	9	6	236	975
North Carolina	3,140	2,995	3,035	90	8	2	308	1,075
South Carolina	3,600	3,600	3,600	72	26	2	315	1,190
Georgia	3,600	3,420	3,475	88	11	1	275	1,160
Florida	2,980	3,450	3,360	94	4	2	279	980
Alabama	3,285	3,345	3,330	91	8	1	287	1,180
Southeast	3,150	3,110	3,130	87	11	2	284	1,100
Mississippi	3,180	2,980	3,110	92	7	1	271	1,080
Arkansas	2,670	2,340	2,440	86	12	2	250	1,090
Louisiana	2,640	2,680	2,660	78	15	7	236	950
Delta States	2,855	2,675	2,725	86	11	3	254	1,050
Oklahoma	1,900	2,000	1,940	52	32	16	219	720
Texas	1,665	1,910	1,765	72	10	18	225	825
Oklahoma-Texas	1,740	1,945	1,810	65	18	17	223	765
Montana	560	660	610	9	71	20	117	590
Idaho	300	360	335	14	65	21	74	693
Wyoming	390	425	410	4	77	19	147	565
Colorado	780	770	775	24	47	29	160	735
New Mexico	1,030	1,400	1,150	71	13	16	150	800
Arizona	200	325	250	22	23	55	62	605
Utah	300	900	430	3	81	16	100	915
Nevada	150	150	150	—	100	—	115	545
Mountain	530	670	580	24	55	21	121	685
Washington	485	515	500	5	58	37	80	560
Oregon	375	620	465	4	76	20	82	515
California	240	200	225	4	20	76	28	645
Pacific	350	385	365	4	48	48	59	565
United States	1,950	1,985	1,970	55	37	8	224	835

Table 12. - Distribution of farms reporting different quantities of concentrates fed to horses and mules, including colts, State groups, 1942

State group 1/	Percentage of farms feeding specified quantities of concentrates per head												
	None	Less than 250 lbs.	250-499 lbs.	500-749 lbs.	750-999 lbs.	1,000-1,499 lbs.	1,500-1,999 lbs.	2,000-2,499 lbs.	2,500-2,999 lbs.	3,000-3,499 lbs.	3,500-3,999 lbs.	4,000-4,499 lbs.	4,500 and over lbs.
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Northeast	.7	.7	2.2	2.9	4.1	16.7	15.3	15.3	12.9	10.5	6.8	4.9	7.0
Corn Belt	.5	1.8	5.3	7.2	8.3	19.4	15.9	13.8	9.9	6.7	4.2	3.5	3.5
Lake States	1.3	3.8	8.2	6.6	8.2	14.3	16.9	13.2	9.0	7.2	3.5	3.5	4.3
Great Plains	2.1	4.2	8.0	6.5	9.5	18.3	16.6	12.0	7.8	6.1	2.7	2.3	1.9
Appalachian	.2	.3	2.7	6.6	6.8	20.2	16.5	13.6	11.8	7.2	5.5	4.0	4.6
Southeast	.1	.3	.3	1.3	1.8	6.8	7.3	12.7	17.6	12.0	12.5	11.9	15.4
Delta States	0	.2	1.4	2.3	2.3	12.3	11.5	15.2	18.7	7.9	8.8	8.8	10.6
Oklahoma-Texas	4.0	2.7	4.6	9.5	8.0	17.0	12.2	12.5	10.9	7.2	4.6	3.4	3.4
Mountain	17.4	19.5	19.6	12.7	7.9	10.5	4.9	2.3	1.8	1.3	.5	1.0	.6
Pacific	43.8	15.9	12.8	8.1	6.4	5.7	3.0	1.7	1.0	.7	.4	.3	.2
United States	4.2	3.9	6.1	6.5	6.8	15.1	13.1	11.8	10.4	7.0	5.1	4.6	5.4

1/ See footnote 2, table 4.

Table 13. - Kind of concentrates fed to horses and mules, including colts, 1942

State group	Grain and concentrates fed per head in 1942	Percentage of all concentrates that was: Corn	Oats	Barley	Grain sorghum	Other grains & mixed grains	Ready-mixed feeds	All other concentrates 1/
	Pounds	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Northeast	2,375	40	46	1.6	—	3.6	6.3	2.5
Corn Belt	1,925	61	38	.2	2/	.5	.1	.2
Lake States	1,890	26	72	.4	—	1.2	.1	.3
Great Plains	1,520	22	69	6.0	.9	1.8	2/	.3
Appalachian	2,020	93	6	.5	2/	.2	.2	.1
Southeast	3,150	87	11	1.0	2/	.3	.4	.3
Delta States	2,725	86	11	.2	.3	2.2	.1	.2
Oklahoma-Texas	1,810	65	18	1.3	13.8	.9	.2	.8
Mountain	580	24	55	13.4	1.0	5.8	.3	.5
Pacific	365	4	48	32.4	.5	12.8	1.1	1.2
United States	1,970	55	37	3.0	1.4	2.0	.9	.7

1/ Includes high-protein concentrates and millfeeds.

2/ Less than one-tenth of 1 percent.

Table 14.- Dry roughage fed to horses and mules, including colts, and days pastured, 1942

State and State group	Quantities of roughage used per head			
	Hay	Cornstalk and sorghum roughage	Straw	Pasture
	Tons	Tons	Tons	Days
New England	3.3	0.1	0.1	72
New York	3.0	.1	.1	73
New Jersey	2.1	.4	.2	62
Pennsylvania	2.7	.2	.3	86
Delaware	2.0	.6	.1	109
Maryland	2.1	.7	.2	112
Northeast	2.8	.2	.2	82
Ohio	2.2	.2	.5	136
Indiana	2.0	.2	.2	143
Illinois	1.7	.2	.3	163
Iowa	1.7	.2	.4	153
Missouri	1.9	.2	.2	158
Corn Belt	1.7	.2	.3	152
Michigan	2.8	.2	.2	90
Wisconsin	2.8	.2	.3	97
Minnesota	2.4	.3	.6	112
Lake States	2.6	.2	.4	102
North Dakota	2.1	.2	.6	161
South Dakota	1.8	.3	.5	184
Nebraska	1.5	.5	.4	169
Kansas	1.7	.2	.1	182
Great Plains	1.7	.3	.4	174
West Virginia	2.0	.2	.1	152
Kentucky	1.6	.4	.1	122
Tennessee	2.0	.1	.1	105
Appalachian	1.8	.2	.1	118
Virginia	2.1	.3	.2	129
North Carolina	2.1	.2	.1	82
South Carolina	1.8	.2	.2	52
Georgia	1.6	.2	.1	83
Florida	1.3	.1	1/	109
Alabama	1.5	.1	1/	104
Southeast	1.8	.2	.1	92

Continued-

Table 14.- Dry roughage fed to horses and mules, including colts, and days pastured, 1942 -- Continued

State and State group	Quantities of roughage used per head			
	Hay	Cornstalk and sorghum roughage	Straw	Pasture
	Tons	Tons	Tons	Days
Mississippi	1.3	.1/	0.1	134
Arkansas	1.6	0.1	1/	132
Louisiana	1.2	1/	.1	159
Delta States	1.4	.1	.1	140
Oklahoma	1.2	.3	.1	196
Texas	0.9	.6	1/	200
Oklahoma-Texas	1.0	.5	1/	198
Montana	1.2	.1	.1	268
Idaho	2.7	1/	.3	176
Wyoming	1.4	1/	.1	244
Colorado	1.7	.2	.2	203
New Mexico	1.6	.1	.3	203
Arizona	1.1	.2	.8	243
Utah	2.7	.1	.3	165
Nevada	.7	---	---	238
Mountain	1.7	.1	.2	220
Washington	2.3	1/	.4	201
Oregon	2.2	1/	.3	195
California	2.8	.1	.9	199
Pacific	2.5	1/	.6	198
United States	1.8	.2	.2	147

1/ Less than .05 ton.

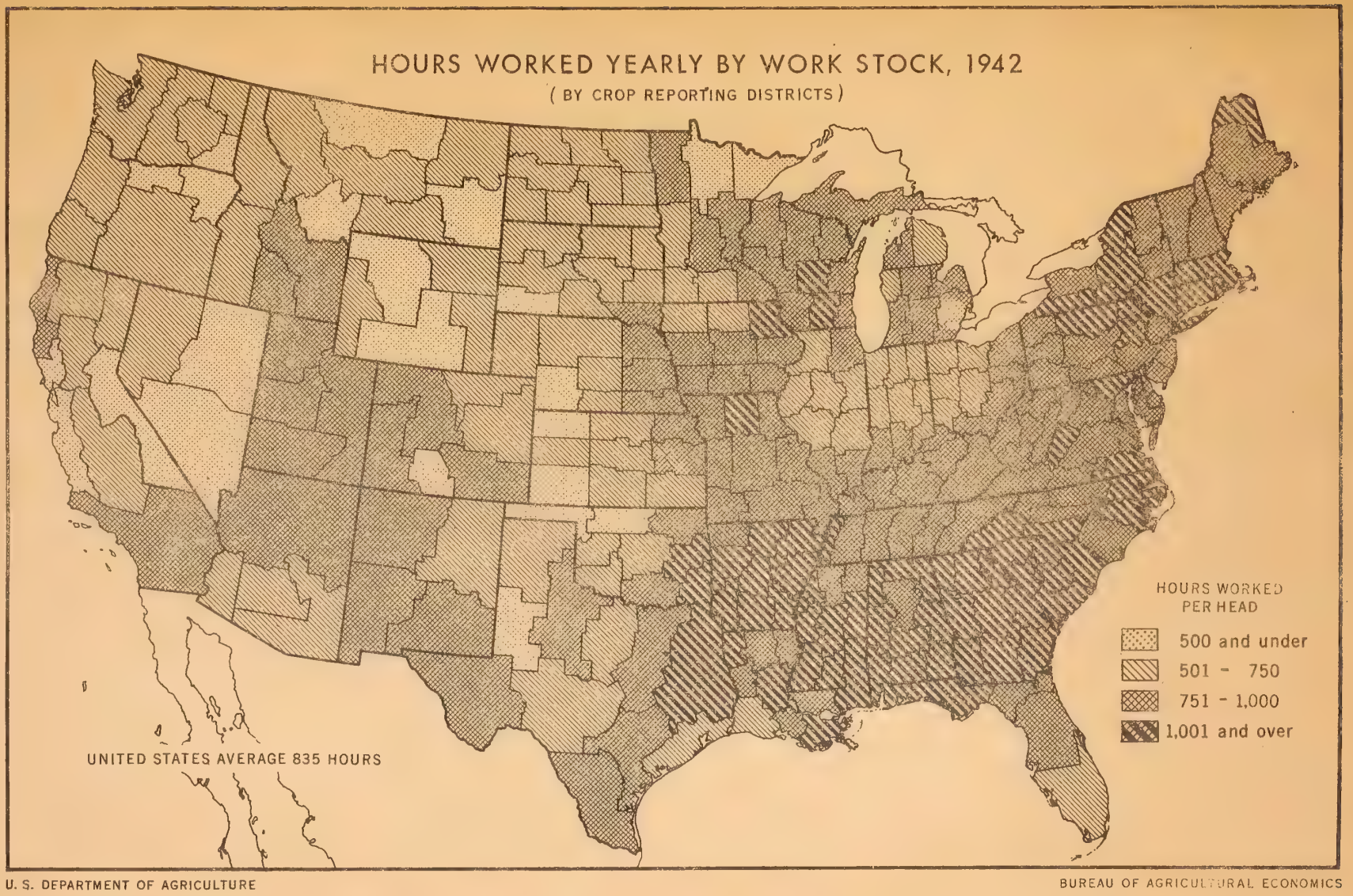
HOURS WORKED YEARLY BY WORK STOCK, 1942
(BY CROP REPORTING DISTRICTS)
HOURS WORKED PER HEAD
500 and under
501 - 750
751 - 1,000
1,001 and over
UNITED STATES AVERAGE 835 HOURS
U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Figure 1.- Work stock are worked more hours per head per year in the South than in other parts of the country. In most of the West, work stock are worked relatively few hours each year.

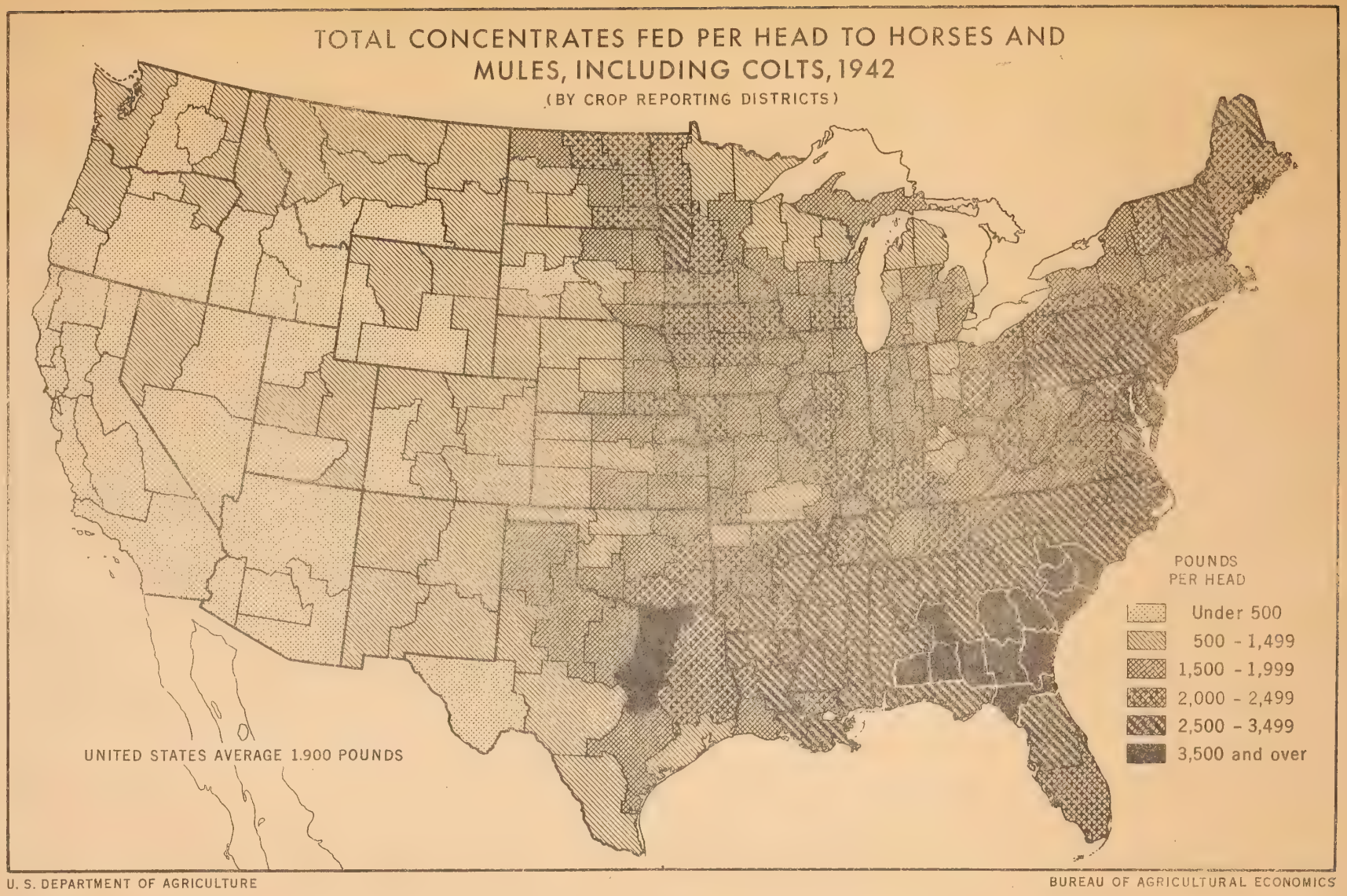
TOTAL CONCENTRATES FED PER HEAD TO HORSES AND MULES, INCLUDING COLTS, 1942
(BY CROP REPORTING DISTRICTS)
POUNDS PER HEAD
Under 500
500 - 1,499
1,500 - 1,999
2,000 - 2,499
2,500 - 3,499
3,500 and over
UNITED STATES AVERAGE 1.900 POUNDS
U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Figure 2.- Feeding of concentrates to horses and mules is heaviest in the South, especially the Southeastern Coastal Plain. In the West feeding of concentrates to horses and mules is light.

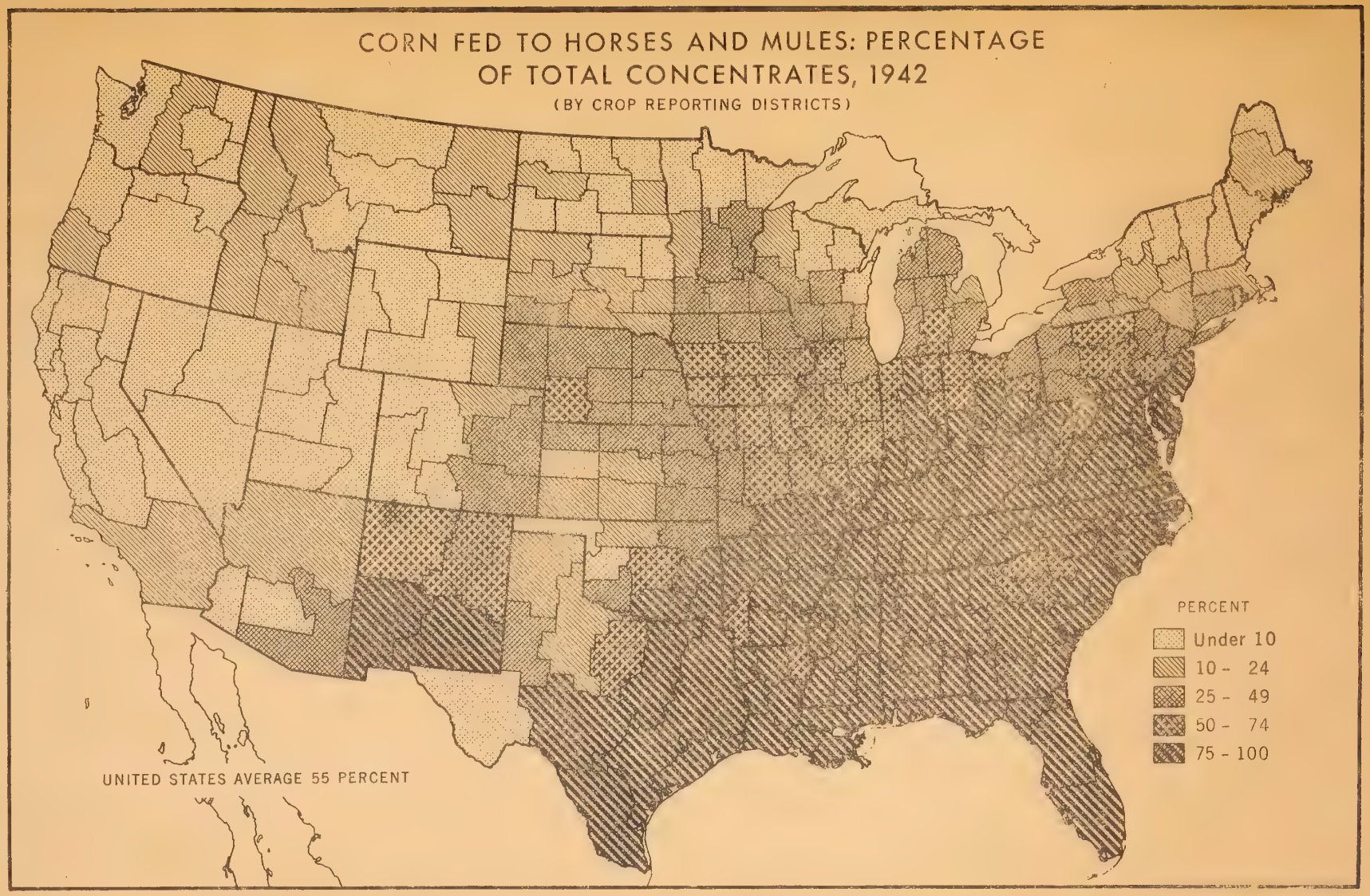
CORN FED TO HORSES AND MULES: PERCENTAGE OF TOTAL CONCENTRATES, 1942
(BY CROP REPORTING DISTRICTS)
PERCENT
Under 10
10 - 24
25 - 49
50 - 74
75 - 100
UNITED STATES AVERAGE 55 PERCENT
U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Figure 3.- Corn is the principal grain fed to horses and mules in the South and in most areas of the Corn Belt.

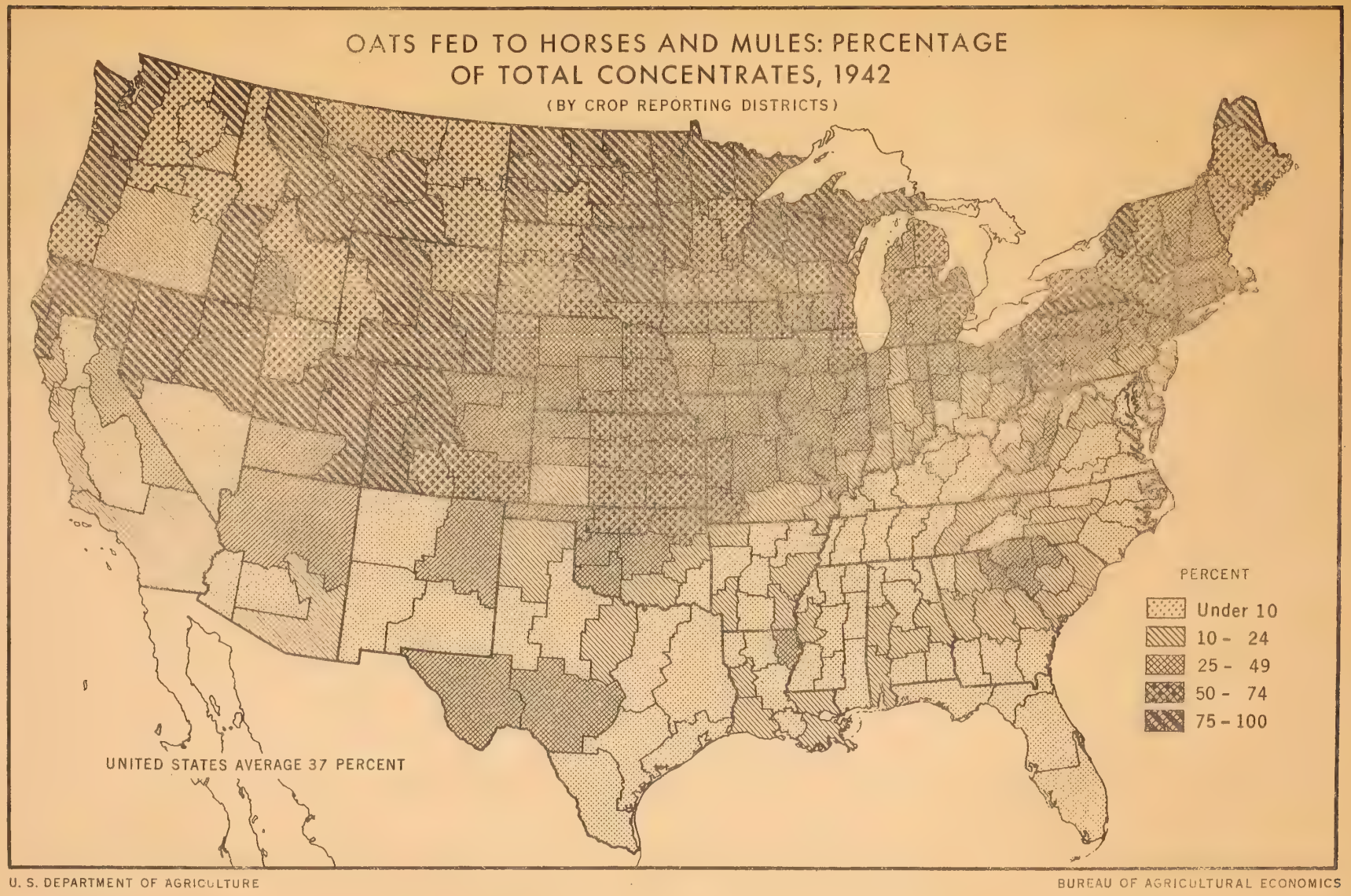

Figure 4.- Oats are the principal feed grain for horses and mules in the Northern one-third of the United States.

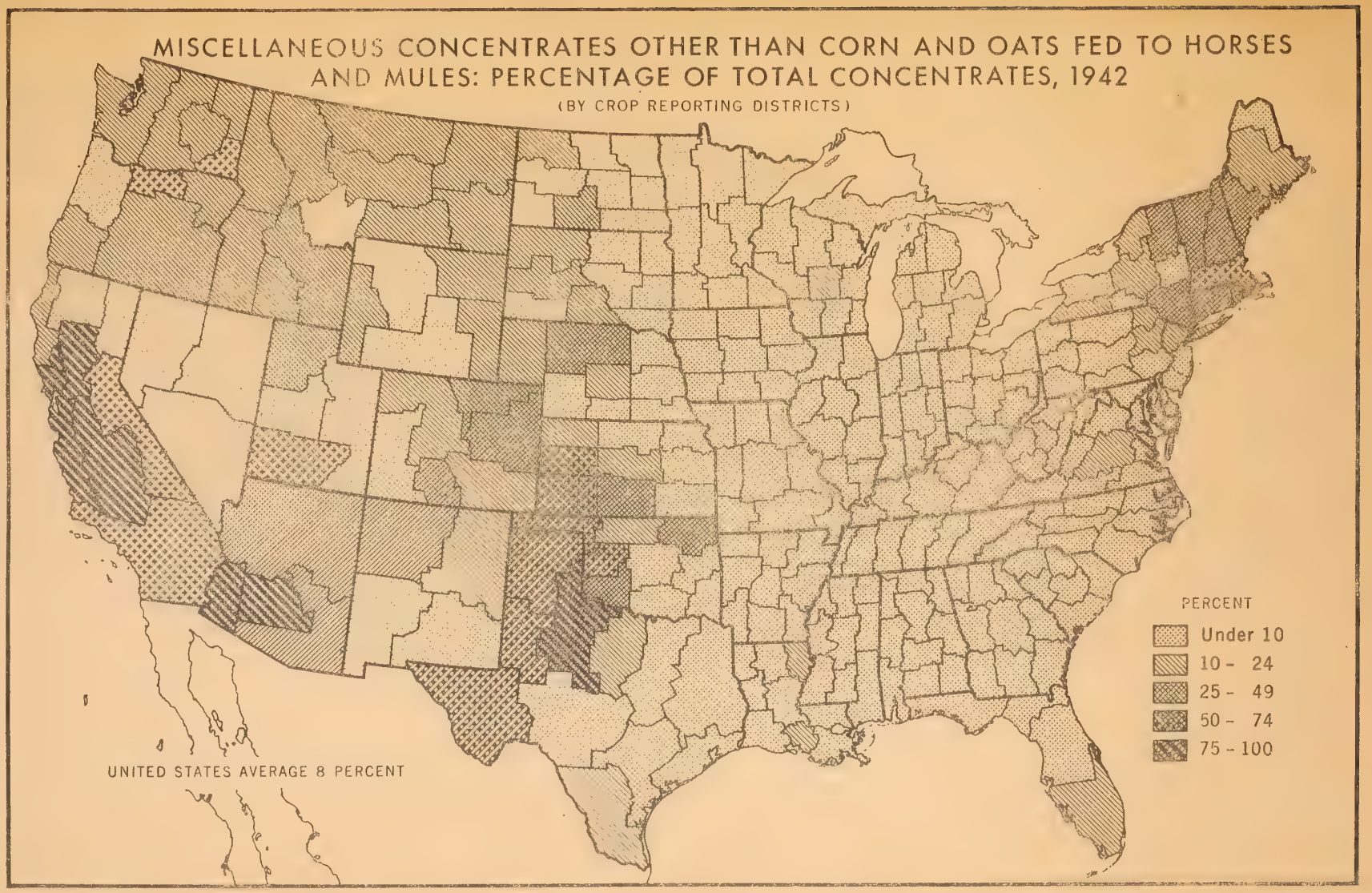
MISCELLANEOUS CONCENTRATES OTHER THAN CORN AND OATS FED TO HORSES AND MULES: PERCENTAGE OF TOTAL CONCENTRATES, 1942
(BY CROP REPORTING DISTRICTS)
PERCENT
Under 10
10 - 24
25 - 49
50 - 74
75 - 100
UNITED STATES AVERAGE 8 PERCENT
U. S. DEPARTMENT OF AGRICULTURE
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Figure 5.- Grain sorghums are important as a feed for work stock in the Southern Great Plains, and barley is most important in the Pacific Coast States and in Arizona. In the New England States considerable commercial mixed feeds are fed to horses and mules.

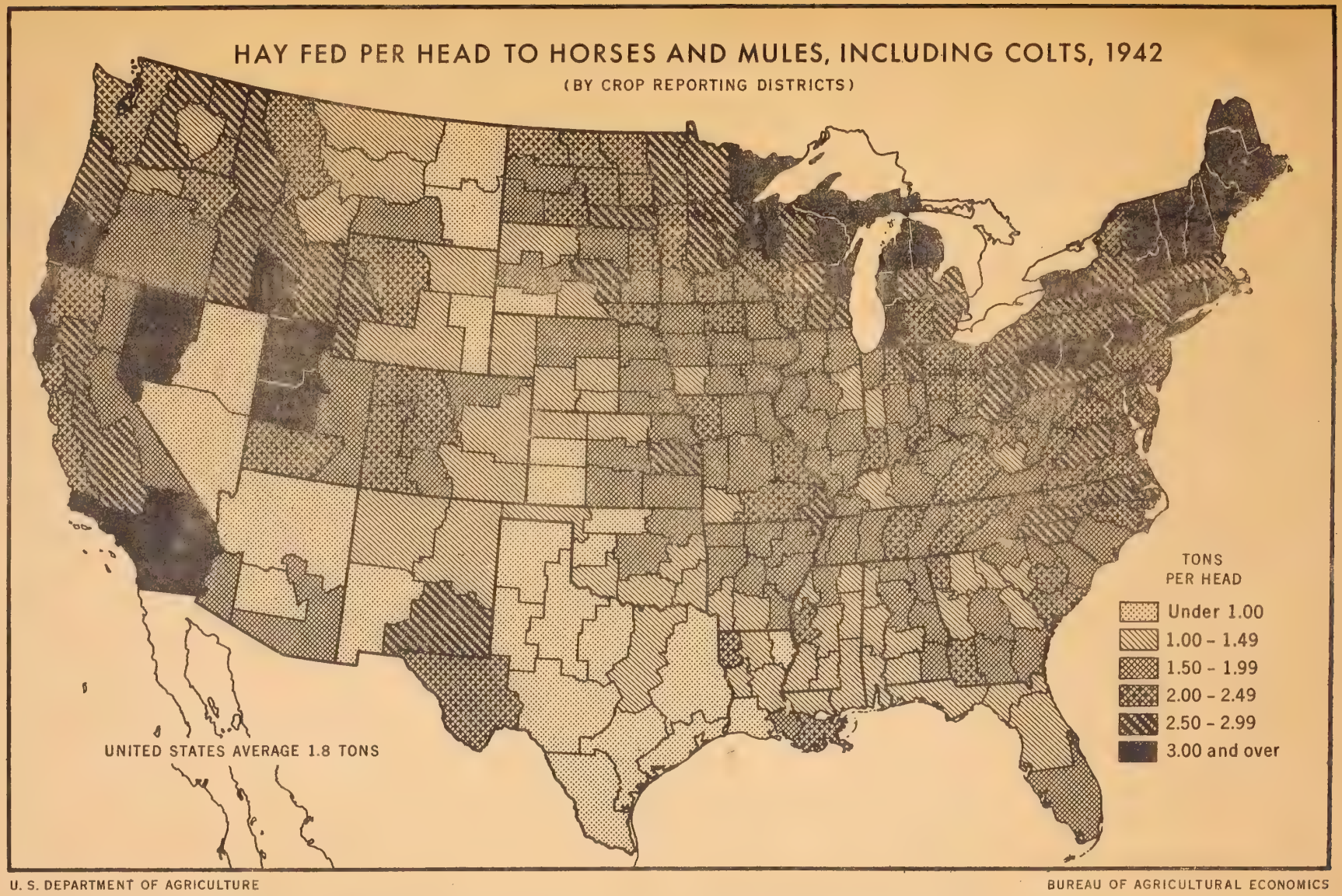
HAY FED PER HEAD TO HORSES AND MULES, INCLUDING COLTS, 1942
(BY CROP REPORTING DISTRICTS)
TONS PER HEAD
Under 1.00
1.00 - 1.49
1.50 - 1.99
2.00 - 2.49
2.50 - 2.99
3.00 and over
UNITED STATES AVERAGE 1.8 TONS
U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Figure 6.- Heavy feeding of hay to horses and mules prevails in the Northeastern States, in most of the Lake States, and in the irrigated areas of the West. The quantity of hay fed in the South is relatively light.

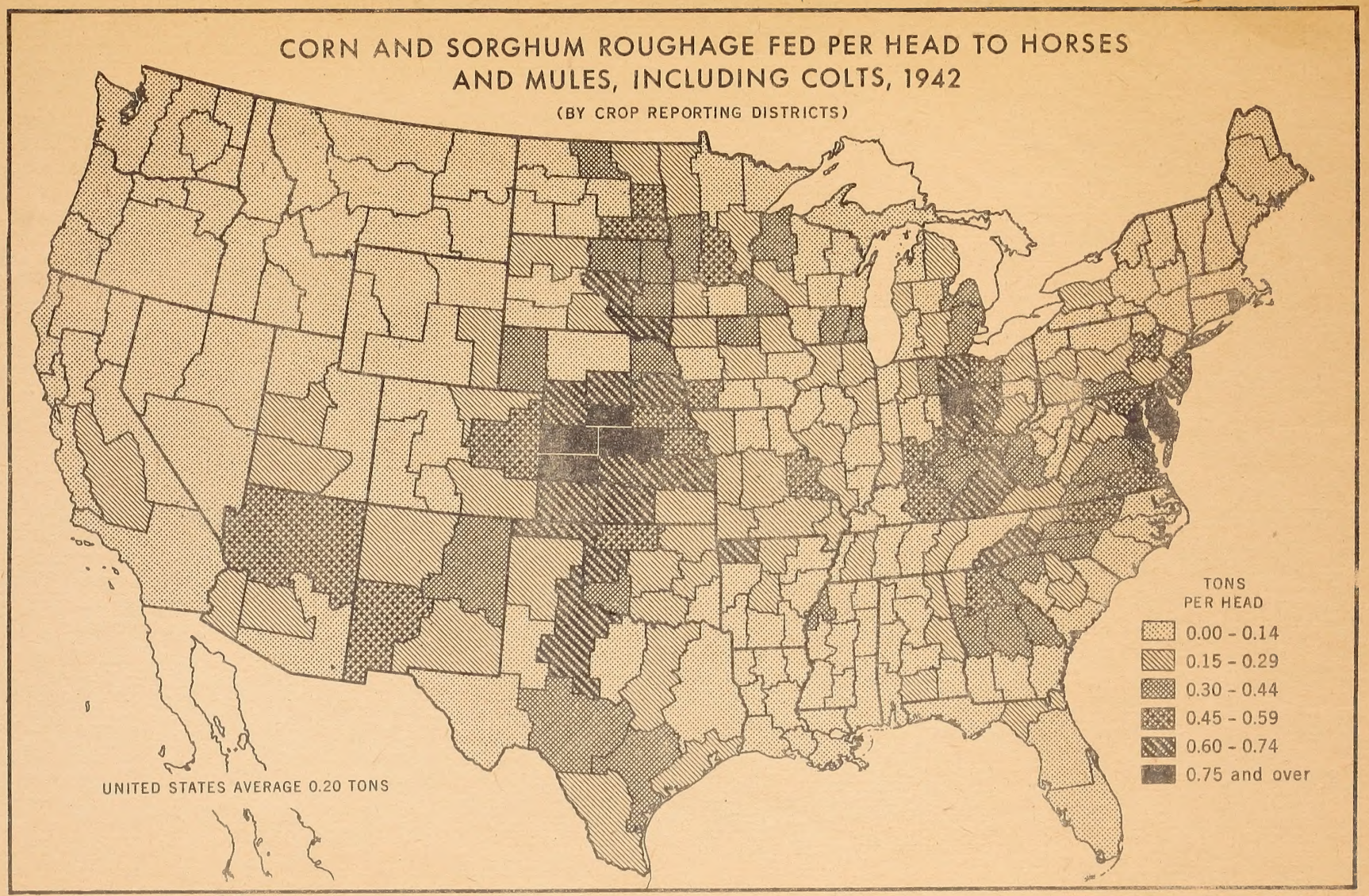
CORN AND SORGHUM ROUGHAGE FED PER HEAD TO HORSES AND MULES, INCLUDING COLTS, 1942
(BY CROP REPORTING DISTRICTS)
TONS PER HEAD
0.00 - 0.14
0.15 - 0.29
0.30 - 0.44
0.45 - 0.59
0.60 - 0.74
0.75 and over
UNITED STATES AVERAGE 0.20 TONS
U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Figure 7.- Much corn fodder is fed to horses in parts of Ohio, Kentucky, Maryland, and Delaware. Sorghum roughage is important in the Southern and Central Plains where sorghums are grown.

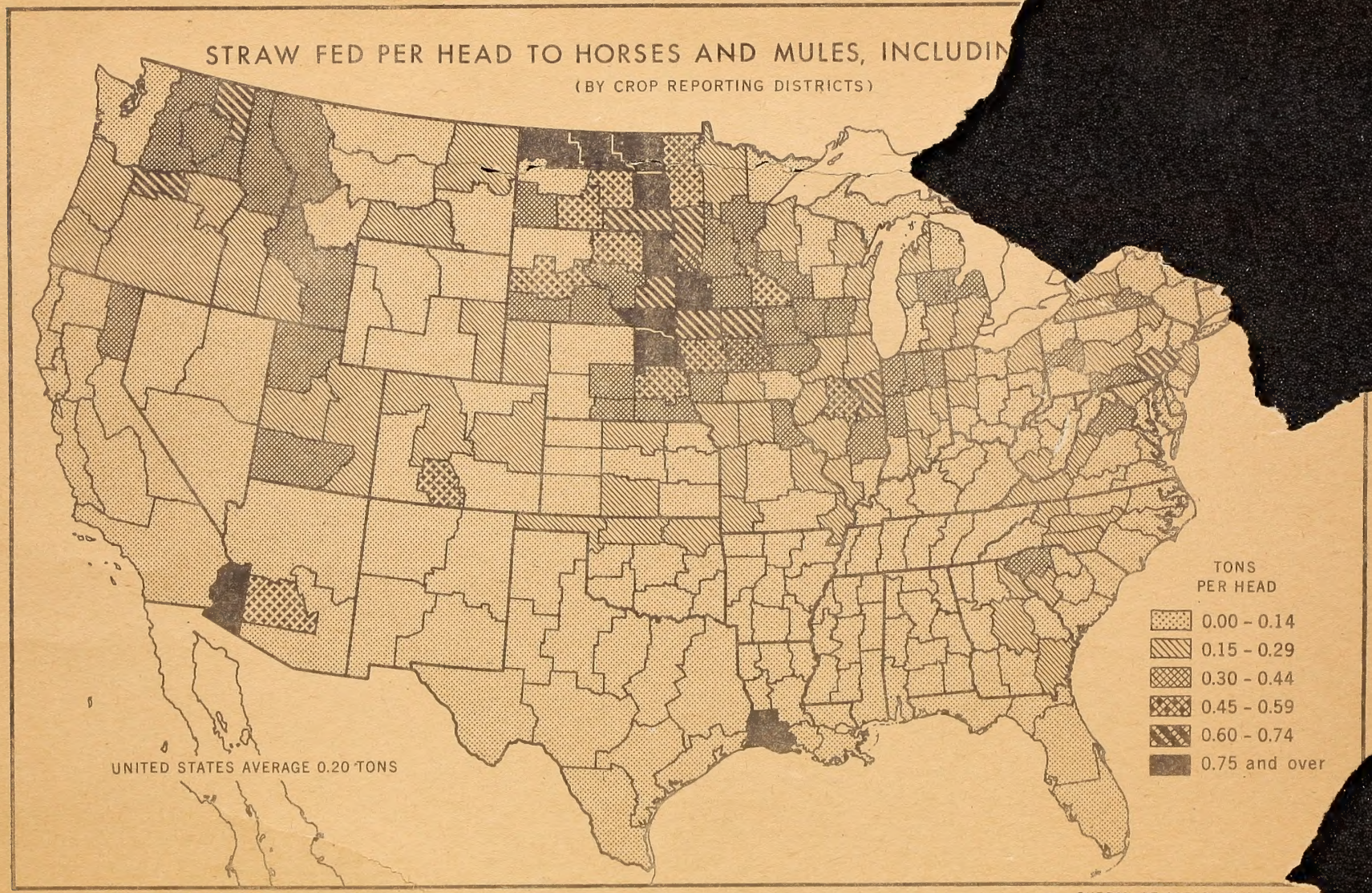

Figure 8.- Feeding of straw to horses and mules is heaviest in the Dakotas and adjacent States. Little straw is used by horses and mules in most areas of the South where the acreage of small grains is usually not important.